

1. Apparatus for pulling a cable attached to a workload, comprising a spring-operated wedge comprising an adaptor having a tapered bore; an articulating wedge slidably disposed in said tapered bore for engaging the cable, said articulating wedge having a length proportional to the diameter of the cable and said articulating wedge capable of positioning in a first position in said tapered bore wherein said articulating wedge grips the cable and a second position in said tapered bore wherein said articulating wedge releases the cable; a coil spring disposed in said adaptor and biasing said articulating wedge in said first position; and a cable pulling mechanism engaging said adaptor for intermittently applying pressure on said adaptor and causing said articulating wedge to grip the cable and pull the workload responsive to movement of said adaptor in a first direction and causing said articulating wedge to release the cable responsive to movement of said adaptor in a second direction.

2. The apparatus of claim 1 wherein said articulating wedge comprises at least three wedge segments and at least one retainer bar engaging said articulating wedge for selectively pivoting at least one of said at least three wedge segments with respect to the others of said at least three wedge segments on said at least one retainer bar.

3. The apparatus of claim 1 wherein said cable-pulling mechanism comprises a carriage adapted to engage said adaptor and at least one fluid-operating piston mechanism operably attached to said carriage for selectively shifting said adaptor forwardly and rearwardly to intermittently grip and release said articulating wedge with the cable and pull the cable and the workload.

4. The apparatus of claim 3 wherein said wedge comprises at least three wedge segments and

at least one retainer bar engaging said wedge for selectively pivoting at least one of said at least three wedge segments with respect to the others of said at least three wedge segments on said at least one retainer bar.

5. Apparatus for use with a cable pulling mechanism for pulling a cable underground, said apparatus comprising a spring-loaded wedge comprising an adaptor for engaging the cable pulling mechanism, said adaptor having two ends and a tapered bore; an articulating wedge slidably disposed in said tapered bore between a first position for gripping the cable and a second position for substantially releasing the cable, said articulating wedge having a length proportional to the diameter of the cable; a first coupling provided in one of said two ends of said adaptor; a coil spring disposed in said first coupling, said coil spring biasing said articulating wedge in said first position; and a second coupling engaging the other of said two ends of said adaptor, wherein the cable pulling mechanism selectively intermittently pulls said adaptor for pulling said cable underground as the cable is intermittently gripped and released by said articulating wedge.

6. The apparatus of claim 5 comprising internal coupling threads provided on said first coupling and external adaptor threads provided on said one of said two ends of said adaptor and wherein said internal coupling threads engage said external adaptor threads for removably securing said first coupling on said adaptor and selectively tensioning said coil spring against said articulating wedge.

7. The apparatus of claim 5 comprising external coupling threads provided on said second

coupling and internal adaptor threads provided on said other of said two ends of said adaptor and wherein said external coupling threads engage said internal adaptor threads for removably securing said second coupling on said adaptor.

8. The apparatus of claim 5 comprising:

(a.) internal coupling threads provided on said first coupling and external adaptor threads provided on said one of said two ends of said adaptor and wherein said internal coupling threads engage said external adaptor threads for removably securing said first coupling on said adaptor and selectively tensioning said coil spring against said articulating wedge; and

( b.) external coupling threads provided on said second coupling and internal adaptor threads provided on said other of said two ends of said adaptor and wherein said external coupling threads engage said internal adaptor threads for removably securing said second coupling on said adaptor.

9. The apparatus of claim 5 wherein said articulating wedge comprises at least two wedge segments and at least one retainer bar pivotally engaging said articulating wedge for selectively pivoting at least one of said at least two wedge segments with respect to the other of said at least two wedge segments on said retainer bar.

10. The apparatus of claim 9 comprising:

(a.) internal coupling threads provided on said first coupling and external adaptor threads provided on said one of said two ends of said adaptor and wherein said internal coupling threads

engage said external adaptor threads for removably securing said first coupling on said adaptor and selectively tensioning said coil spring against said articulating wedge; and

(b.) external coupling threads provided on said second coupling and internal adaptor threads provided on said other of said two ends of said adaptor and wherein said external coupling threads engage said internal adaptor threads for removably securing said second coupling on said adaptor.

11. An apparatus for pulling cable and a workload attached to the cable, comprising a spring-loaded wedge comprising an adaptor having two ends; a first coupling attached to one end of said adaptor; a second coupling attached to the other end of said adaptor; a tapered bore provided in said adaptor; an articulating wedge having at least two wedge segments slidably disposed in said tapered bore of said adaptor, said at least two wedge segments each having a length proportional to the diameter of the cable, for engaging the cable; a spring disposed in said first coupling for intermittently biasing said at least two wedge segments in a cable-gripping configuration in said tapered bore of said adaptor; and a cable pulling apparatus engaging said adaptor for intermittently applying tension to said adaptor, wherein said at least two wedge segments slide into said cable-gripping configuration in said tapered bore of said adaptor and pull the cable and the workload when said cable pulling apparatus moves said adaptor in a first direction, and said at least two wedge segments slide into a cable-releasing configuration in said tapered bore of said adaptor when said cable pulling apparatus moves said adaptor in a second direction.

12. An apparatus for pulling a work load, comprising a cable for connection to the work load

and at least one cable-pulling device engaging said cable for pulling the work load, said at least one cable-pulling device comprising at least one cable-pulling member and a cable-gripping element connected to said at least one cable-pulling member for pulling said cable and the workload.

13. The apparatus of claim 12 wherein said at least one cable-pulling device comprises a frame for receiving said at least one cable-pulling member and wherein said at least one cable-pulling member comprises a hydraulic cylinder having a piston and said cable-gripping element is carried by said piston, for alternately gripping, pulling and releasing said cable.

14. The apparatus of claim 12 wherein said at least one cable-pulling member comprises a pair of cable-pulling members and a pair of cable-gripping elements provided on said pair of cable-pulling members, respectively, and disposed in in-line relationship for alternately gripping, pulling and releasing said cable.

15. The apparatus of claim 14 wherein said cable-pulling device comprises a frame for receiving said pair of cable-pulling members and said pair of cable-gripping elements and wherein said pair of cable-pulling members each comprises a hydraulic cylinder carried by said frame and a piston slidably disposed in said hydraulic cylinder and connected to a corresponding one of said pair of cable-gripping elements, for alternately gripping, pulling and releasing said cable.

16. A cable-pulling device for engaging a cable attached to a pipe bursting head and pulling the pipe bursting head against a pipe to facilitate bursting and replacing the pipe, said cable-pulling

device comprising a frame; a pair of cable-pulling members carried by said frame; and a pair of cable-gripping elements connected to said pair of cable-pulling members, respectively, for alternately gripping, pulling and releasing the cable, whereby the pipe bursting head progressively cuts and bursts the pipe along the length of the pipe as said pair of cable-gripping elements alternately grip and release the cable and said pair of cable-pulling members pulls the cable and the cable pulls the pipe bursting head against the pipe.

17. The cable-pulling device of claim 16 wherein said pair of cable-pulling members each comprises a hydraulic cylinder having an interior fluid chamber carried by said frame and a piston slidably disposed in said fluid chamber of said hydraulic cylinder, and wherein said piston is connected to a corresponding one of said pair of cable-gripping elements for alternately gripping and releasing the cable.

18. The cable-pulling device of claim 17 comprising a tapered articulating wedge slidably disposed in each of said pair of cable-gripping elements for gripping the cable as said piston traverses said fluid chamber of said hydraulic cylinder in a first direction and releasing the cable as said piston traverses said fluid chamber of said hydraulic cylinder in a second direction.

19. The cable-pulling device of claim 17 comprising a front hydraulic fluid port provided in fluid communication with said fluid chamber at one end of said hydraulic cylinder and a rear hydraulic fluid port provided in fluid communication with said fluid chamber at the other end of said hydraulic cylinder for facilitating flow of pressurized hydraulic fluid into and out of said fluid chamber and

movement of said piston in a selected direction in said fluid chamber.

20. The cable-pulling device of claim 19 comprising a tapered articulating wedge slidably disposed in each of said pair of cable-gripping elements for gripping the cable as said piston traverses said fluid chamber of said hydraulic cylinder in a first direction and releasing the cable as said piston traverses said fluid chamber of said hydraulic cylinder in a second direction.

21. The cable-pulling device of claim 18 wherein said cable-gripping element comprises a male coupling carried by said piston, an adaptor body engaging said male coupling and a pipe coupling engaging said adaptor body and wherein said tapered articulating wedge is slidably disposed in said adaptor body.

22. The cable-pulling device of claim 21 comprising a front hydraulic fluid port provided in fluid communication with said fluid chamber at one end of said hydraulic cylinder and a rear hydraulic fluid port provided in fluid communication with said fluid chamber at the other end of said hydraulic cylinder for facilitating flow of pressurized hydraulic fluid into and out of said fluid chamber and movement of said piston in a selected one of said first direction and said second direction in said fluid chamber.